

REMARKS

Claims 1-8 remain in this application. Claims 1-2 are amended. No new matter is introduced.

Claims 1-3 are rejected under 35 U.S.C. §102(b) as being anticipated by Fujikura (JP 2002-310222); and Claims 4-8 are rejected under 35 U.S.C. §103(a) as being unpatentable over Fujikura (JP 2002-310222) in view of Fujikura (JP 2002-62067).

Applicant respectfully submits that the construction of the flat heat pipe of the present invention is totally different from that of the Fujikura (JP 2002-310222) device, and is thus very much puzzled as to how the present invention could be anticipated by the Fujikura (JP 2002-310222) reference.

One of the key differences, Applicant respectfully submits, is that the heat conducting pillars are placed only about the heat spot, which, according to the common use of heat pipes, is located around the center of the heat pipe. (This is so because the heat pipes are typically designed to be greater in surface area than the heat source to maximize heat transfer efficiency; therefore, the heat spot is typically found around the center section of the heat pipe.)

Applicant respectfully submits that, as shown in Fig. 5 of the present invention, because the heat conducting pillars are only formed which are located about the heat spot, or the central section, of the heat pipe, the two side regions of the upper wall, due to the absence of heat conducting pillars, remain cold. This allows the condensates to be formed and collected in the side sections of the upper wall and flowed along the side walls to the bottom wall. In contrast, in the Fujikura (JP 2002-310222) reference, since the “pillars” are not localized in the central section, no temperature gradient can be expected (and thus no condensate can be collected at the upper surface), if the pillars are made of heat conducting materials. In order to allow condensates to be formed at the upper surface, the “pillars” in the Fujikura (JP 2002-310222) reference must not be made of heat conducting material. This is one of the major differences between the present invention and the Fujikura (JP 2002-310222) reference, in that the pillars of the present invention can be made of heat conducting material;

whereas, the “pillars” of the prior devices must not be made of good heat conducting materials.

Applicant respectfully submits that, in order to better define the present invention, Claim 1 has been amended so that it now reads: – ***and said heat conduction pillars are disposed only around a central section of the flat heat pipe so as to allow condensates to be collected around both sides of the upper wall of the flat heat pipe*** --. However, Applicant respectfully submits that, as discussed above, the design of all of the prior art devices do not allow the “pillars” to be made of heat conducting material (otherwise, no condensates could be collected at the upper surface). Only the design of the present invention allows the pillars to be made of heat conducting material. Applicant believes that such a difference is fundamental, and such a fundamental difference, among other things, makes the heat pipe of the present invention totally and patentably different from any device taught in the prior art references cited by the Examiner.

Again, Applicant respectfully submits that, since many of the important limitations are lacking from the prior art teaching, a prima facie case cannot be made. As discussed above, one of the key elements of the present invention is that the heat conducting pillars of the present invention are formed only in the central section of the heat pipe (corresponding the hot spot), thus, allowing condensates to be formed and collected in the side sections of the upper surface which remain cool due to the absence of the heat conducting pillars. The design of the present invention also allows the pillars to be made of heat conducting material. In contrast, none of the prior art devices taught or suggested such localized pillars arrangement. Again, as discussed above, if the pillars of the prior art devices were made of heat conducting material, the temperature of the entire upper wall would more or less instantly and uniformly become hot, thus preventing the condensates to be formed. This is what Applicant had very forcefully argued in the response to the first Office Action, that is: the pillars of the prior art devices are only to provide structural support; whereas, the pillars of the present invention can provide both heat transfer and structural support.

In light of the foregoing, it is believed that the present invention is in condition for allowance. And Applicant respectfully requests that a timely Notice of Allowance be issued in this case. If the

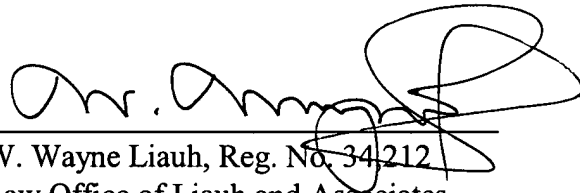
Examiner has any question, he or she is invited to call or fax Applicant's counsel at the telephone numbers below.

Respectfully Submitted,

1/17/05

Date

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